**Chance and data: Dice Activity**

**Aim** : To see what outcomes occur when a die/dice are rolled a number of times.

**Equipment**: a pair of die, netbook/workbook

1. Heading in your **work book/netbook**, **Chance and Data**.
2. Draw up a table as seen below in your workbook/netbook.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Die Number | 1 | 2 | 3 | 4 | 5 | 6 |
| Number of times  (Tally) |  |  |  |  |  |  |
| Frequency Total |  |  |  |  |  |  |

1. **Guess** the probability of getting a 1, 2, 3, 4, 5 or a 6, when you roll the die once and record this in your workbook/netbook.

The Pr(1) = The Pr(4) =

The Pr(2) = The Pr(5) =

The Pr(3) = The Pr(6) =

1. Working in pairs, roll a die 100 times, record your results in the above table.
2. Draw up the table below

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Die Number | 1 | 2 | 3 | 4 | 5 | 6 |
| Our results |  |  |  |  |  |  |
| Name 2 |  |  |  |  |  |  |
| Name 3 |  |  |  |  |  |  |
| Name 4 |  |  |  |  |  |  |
| Name 5 |  |  |  |  |  |  |
| Name 6 |  |  |  |  |  |  |
| Name 7 |  |  |  |  |  |  |
| Name 8 |  |  |  |  |  |  |
| Name 9 |  |  |  |  |  |  |
| Name 10 |  |  |  |  |  |  |
| Total |  |  |  |  |  |  |

1. Collect your data from nine other pairs of students and place in the table above.
2. What is the total number of times the die was thrown by the ten groups of students?
3. What do you notice from the results? Were they very different? Similar?
4. Were your actual results close to your estimation from Number 3.

**Part Two**

1. This time you need two dice.
2. You will roll the dice [together] 100 times and record your results in a table. What **numbers** would be written across your table this time?
3. What fraction do you think you will get this time for each number you will roll. Record this in your book/netbook.
4. Collect data from 4 other people this time.
5. Record this in a table similar to the second table.
6. What do you notice about the results this time.

* Were they even?
* What numbers occurred the most? Why?
* What numbers occurred the least? Why?
* What games/gambling use two dice? Do you think they are fair?
* List all possible outcomes in a table(as Below)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| + | 1 | 2 | 3 | 4 | 5 | 6 |
| 1 | 2 |  |  |  |  |  |
| 2 |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |
| 6 |  |  |  |  |  |  |

1. Determine their probabilities, using the above table.

Pr(2) =

Pr(3) =

Pr(4) =

Pr(5) =

Pr(6) =

Pr(7) =

Pr(8) =

Pr(9) =

Pr(10) =

Pr(11) =

Pr(12) =